

GUMUSCIAN, B.

Arches with a span of 36.35m for the roofs of plants. p. 3

CONSTRUCTORUL, Bucuresti, Vol 8, No. 327, Apr. 1956

SO: East European Accessions List (EEAL) Library of Congress, Vol 5, No. 7, July, 1956

AUTHORS: Shveykin, V. V., Gun, G. Ya. SO7/163-58-1-26/53

TITLE: On the Change of the Wall-Thickness of Tubes in Reduction  
(Ob izmenenii tolshchiny stenki truby pri redutsirovani)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, Nr 1,  
pp 140-145 (USSR)

ABSTRACT: In the present investigation the change of the wall-thickness  
of tubes is theoretically determined (without determining the  
moments). The following formulae for the determination of the  
wall-thickness of the tubes prior to rolling, and of the wall-  
thickness after rolling were suggested:

$$S_o = S_k \left( \frac{d_o}{d_k} \right)^{-A} \quad (18); \quad S_k = S_o \left( \frac{d_o}{d_k} \right)^A \quad (19).$$

The results obtained in the calculation of  $S_o$  and  $S_k$  agree  
with the values obtained experimentally.  
By means of these formulae the wall-thickness desired prior  
to and after reduction may be calculated, thus saving un-  
necessary work. (Reduction in this sense means rolling without

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S07/163-58-1-26/53

On the Change of the Wall-Thickness of Tubes in Reduction

any straightening device).

There are 1 figure, 1 table, and 3 references, 3 of which are Soviet.

ASSOCIATION: Ural'skiy politekhnicheskii institut (Ural Polytechnical Institute)

SUBMITTED: October 4, 1957

Card 2/2

AUTHORS: Zhvoykin, V. V., Gun, G. Ya. 307/163-58-2-29/46

TITLE: The Specific Pressure in Stamping of Pipes Without Frames  
(Udel'noye davleniye pri prokatke trubyy bez opravki)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958,  
Nr 2, pp. 167-169 (USSR)

ABSTRACT: The equation for the determination of the specific pressure  
in the stamping of pipes without frames was suggested:

$$p = \sigma_s \left( \frac{S_o}{d_o} + \frac{S_k}{d_k} \right), \quad (11)$$

where  $\sigma_s$  denotes the flow limit,  $S$  - the wall thickness of  
the pipe, and  $S_o$  - the initial wall thickness.

By means of this formula the specific pressure was determined  
and then it was compared with the values found experimentally  
by Ya. I. Vatkin. From the values given in the table may be  
seen that the results agree well. The table was compiled un-  
der the consideration of the following parameters:

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The Specific Pressure in Stamping of Pipes  
Without Frames

SOV/163-58-2-29/46

Diameter of the roll  $D = 260$  mm, length of the roll  $L = 350$  mm,  
 $l_k = 55$  mm,  $\theta = 30^\circ$ . Room temperature and  $1050^\circ\text{C}$  were employed  
by the authors.

The determinations by means of the formula mentioned above  
are the more accurate the thinner the wall of the pipe is.  
There are 1 figure, 1 table, and 2 references, 2 of which  
are Soviet.

ASSOCIATION: Ural'skiy politekhnicheskii institut (Ural Polytechnical  
Institute)

SUBMITTED: October 1, 1957

Carl P. G.

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1212/2727

Derzhakova metallo davleniyam; sbornik statey, vyp. 5 (Metal Forming; Collection of Articles, No. 5) Moscow, Metallurgizdat, 1959. 197 p. 3,000 copies printed.

Scientific Ed.: L.N. Al'shevskiy, Candidate of Technical Sciences; Ed. of  
Publishing House: N.A. Valov; Tech. Ed.: A.I. Krasov.

**purpose:** This collection of articles is intended for technical personnel and scientific workers in the metallurgical and machinery-construction industries.

**CONTENTS:** This collection of articles deals with problems of rolling and tube manufacture. Results of research done on roll design and new methods of determining basic manufacturing parameters in the production of tubes and other rolled shapes are presented. Methods of analyzing the kinematics of processes in helical piercing mills and rolling mills by means of motion pictures are discussed. Also discussed are several phenomena associated with tube rolling. In chronological order, the articles follow. References follow several of the articles.

**Vignatelli, A.A.** (Candidate of Technical Sciences, Vsesoyuznyy nauchno-issledovatel'skiy tsentr fiziko-khimiicheskoy teorii i eksperimenta, ul. Lenina, 13, Moscow, U.S.S.R.). Investigation of the Kinematics of Processes in Helical Piercing Mills (in Russian). *Trudy Vsesoyuznogo nauchno-issledovatel'skogo tsentra fiziko-khimiicheskoy teorii i eksperimenta*, 1964, No. 1, pp. 10-14, 11 refs.

This article deals with industrial and laboratory tests of a method of investigating kinematic processes in rolling by means of motion pictures. The mechanism of the process is discussed, and experiments on piercing and three-roll mills are described. Results are shown in tables and diagrams.

Frykholm, B.A., Ed. Colloids of Technical Sciences, and E.O. Brady [Editors], and Thermally Induced Rate of Deformation in Metals and Alloys (Russian) Vol. 1 1979 129

Vodila, Ya. I. [Candidate of Technical Sciences]; A. A. Shvartsenko [Doctor of Technical Sciences]; and I. B. Kravtsov, S. V. Rozhnov, and I. A. Chibrikov, [Inventors] metallurgically Institute (Metallurgicheskiy Metalurgical Institute).

Investigation on  
Tuberculosis, and All-Union Scientific Research Institute for Pipes].  
of Tube Rolling is a Continuous Mill With a Long Mandrel  
143

Results of experimental investigations of press design for a continuous tube-rolling mill are presented. Causes of such tube defects as nonuniformity of wall thickness and defective ends are discussed. Improvements in press design, material withdrawal, and roll pressure adjustments are suggested as remedies.

**Shapovalov, V.M.** [Candidate of Technical Sciences], and **P.P. Lavrov** [Engineer],  
Vestnitskaya]. Forging During Tube Rolling in a Continuous Seven-stand Mill  
165

Shenita, L.V. [Doctor of Technical Sciences], and G.Ye. Osm [Engineer],  
[Sverdlovsk Polytechnical Institute]. Analytical Method for Determining Unit Pressure  
on the Tube Wall Without a Model

**Berushatyn, M.M.** (Engineer, All-Union Scientific Research Institute for Pipes).  
 Study of the process of the formation of defects in pipes during bending without a mandrel.  
 Based on results of tests of pipes of different diameters and wall thicknesses.  
 170

A formula is derived for determining changes in wall thickness and outside diameter, amount of reduction, approach angle of the nit, coefficient of friction, and ultimate strength of the material. Another formula for determining initial wall thickness is presented. The formulas are confirmed by experimental data.

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SHVEYKIN, V.V., prof., doktor tekhn. nauk; GUN, G.Ya., inzh.

Changes in tube wall thickness during the process of rotary swaging  
without mandrels. Izv. vys. ucheb. zav.; chern. met. 2 no.4:57-64  
Ap '59. (MIRA 12:8)

1.Ural'skiy politekhnicheskiy institut. Rekomendovano kafedroy  
obrabotki metallov davleniyem Ural'skogo politekhnicheskogo instituta.  
(Tubes) (Forging)

S/032/60/026/06/27/044  
B010/B016

AUTHORS: Mednikov, Yu. A., Gun, G. Ya.

TITLE: The Accuracy of Evaluating the Deformability of the Weld  
Seam of Pipes in Flattening Tests

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 6, pp. 750-753

TEXT: The flattening test on pipe specimens is carried out according to ГОСТ (GOST) 8695-58 and 1753-53. In this connection the pipes are flattened up to about 2/3 of the original diameter. The weld seam of the pipe has to pass vertically to the compressive stress. The deformability of the weld seams is judged from the cracks occurring on the external surface of the pipe. A possible destruction of the weld seam on the inner surface of the pipe is not considered at all. The authors point out that the true deformability of a weld seam may be determined only after a universal evaluation of the pipe under load. Furthermore, the thickness of the pipe wall is not taken into account in GOST 1753-53. The tests performed in the present study (Table, Figs. 2-5) show that the

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The Accuracy of Evaluating the  
Deformability of the Weld Seam of Pipes  
in Flattening Tests

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B010/B016

deformation of the surface layers in pipes with equal diameter vary considerably with the thickness of the pipe wall. Therefore, the decrease of the pipe diameter caused by the load must be chosen by considering the thickness of the wall, when comparing the deformability of a weld seam. There are 5 figures, 1 table, and 1 Soviet reference. ✓

ASSOCIATION: Chelyabinskiy truboprokatnyy zavod (Chelyabinsk Tube  
Rolling Mill)

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S/148/60/000/009/009/025  
A161/A030

1.14.00 1496, 1045, 1454

AUTHORS: Smirnov-Alyayev, G.A., and Gun, G.Ya.

TITLE: An approximate method for the solution of stationary problems of viscous-plastic flow in volume

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, no. 9, 1960, 62-67

TEXT: Up to now no accurate solution could be found for the problem in view of the great mathematical difficulties. The author suggests an approximate method omitting the minor factors and reducing the problem to a two-dimensional one. The flow process is analyzed on one of the major pressure working processes - a prismatic or cylindrical body moving in axial direction and subjected to plastic deformation in contact with a tool. An element is separated by two perpendicular sections  $\Omega$  and  $\Omega_1$  (Fig.1), with depth  $dz$  at the time moment  $t_0$ , and the matrix of derived velocity components  $V$  on the rectangular coordinates  $x$ ,  $y$ , and  $z$  is considered and the minor matrix elements are eliminated. The simplifying kinematic hypo-

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S/148/60/000/009/009/025  
A161/A030

An approximate method for the solution...

thesis is that

$$V_z = f(z), \text{ or } \frac{\partial V_z}{\partial x} = \frac{\partial V_z}{\partial y} \approx 0 \quad (2)$$

The separated element assumes an absolutely rigid body. The forces and velocities on the surface of the separated element and the external and internal forces are calculated in a system of integral equations. The connection of the velocity  $V_{z_0}$  with the velocities  $V_x$  and  $V_y$  and hence with  $H_0$  can be found from the equation (7):

$$\bar{V} \cdot \nabla F = \bar{V}_1 \cdot \nabla F = \Delta \bar{V} \cdot \nabla F = 0 \quad (7)$$

(where  $\bar{V}$  are the velocities of the body points,  $\bar{V}_1$  - velocities of the tool points, and  $\Delta \bar{V}$  - displacements of the body points in relation to the tool in a tangent plane to the surface  $F$ ) written in scalar form:

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An approximate method for the solution...

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$$V_x + V_y \operatorname{tg} \beta + V_{z_0} \cdot \operatorname{tg} \psi = 0 \quad (42)$$

The equations system makes possible the construction of a velocities field of body under deformation, and the determination of specific pressure and friction force on the surface. There are 2 figures and 3 Soviet-bloc references.

ASSOCIATION: Leningradskiy voyenno-mekhanicheskiy institut (Leningrad Military Mechanical Institute)

SUBMITTED: 23 February 1960

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24 4200  
11350

S. 48/61/0001001/004/015  
AC 11/A 31

AUTHORS: Smirnov-Alyayev, G. A., and Guk, G. Ya.

TITLE: Axially symmetric problem of the theory of plastic flow during the reduction, expansion and drawing of tubes

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy Chernaya metallurgiya, no. 1, 1961, 89 - 99

TEXT: The authors analyze problems connected with the calculation of stresses and deformations during the reduction, expansion and drawing of thin-walled and thick-walled tubes. They use the approximated method which they developed on the basis of the theory of ductile-plastic flow [Ref. 1: G. A. Smirnov-Alyayev, G. Ya. Guk, Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, 1960, no. 9]. The authors present first the basic system of equations for the case of a deformed body with cross section  $\Omega$ , representing a ring, limited by the circumferences of radii  $R_0$  and  $r_0$  ( $R_0$  - radius of the contact contour,  $r_0$  - radius of the free contour), the deformed body interacting with the tool over the constant surface  $R = R(z)$  (Fig. 1). Since one of the body surfaces is free, its deformed state is

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S/148/11/000/001 004/015  
A033/A133

Axially symmetric problem of the theory of...

not known beforehand and depends generally on the axial stresses, on the ratio  $r_0$  to  $R_0$  and also on the friction conditions on the surface. The authors, referring to Ref. 1 base their calculation on the incompressibility equation

$$\frac{\partial v_r}{\partial r} + \frac{v_r}{r} + \frac{\partial v_z}{\partial z} = 0,$$

where  $v_r$  and  $v_z$  = radial and axial components of velocity  $\bar{V}$ . With the aid of a series of integral and differential equations they determine the velocity field and also the specific pressure and friction forces on the part - tool contact surface. Based on the abovementioned system of equations the authors then determine the change in wall thickness for the drawing of tubes without mandrel through a conical die. The importance of this problem is emphasized by the number of theoretical and experimental solutions achieved in this field [Ref. 2: A. Ludenskiy, G. Pishchikov et. al., Stal', 1937, no. 3; Ref. 3: V. I. Karasevich, Tsvetnyye metally, 1946, no. 5; Ref. 4: M. Z. Yermanok, Izvestiya vysshikh uchebnykh zavedeniy, Tsvetnaya metallurgiya, 1958, no. 4; Ref. 5: V. V. Shveykin, G. Ya. Gun, Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, 1959, no. 4.

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21201

S/148/61/000/001/004/015  
A033/A133

Axially symmetric problem of the theory of...

Ref. 6: M. M. Bernshteyn. Sb. "Obrabotka metallov davleniyem", Metallurgizdat, 1959, no. 5; Ref. 7: B. Pochta. Gutnitske Listy, 1955, no. 4; Ref. 8: A. A. Il'yushin. Plastichnost' (Plasticity), Gostekhizdat, 1948; Ref. 9: N. F. Lebedev. Inzhenernyy sbornik AN SSSR, v. IV, 1950]. The authors point out, however, that hitherto there has been no solution that did not contain empirical "correcting functions". Nomograms presented by the authors show the solution of calculating the variable parameter  $v$  and of determining the change in wall thickness during the drawing of tubes without mandrel depending on the ratio of the initial to the final outer radius  $R_1$  to  $R_2$ , the degree of thinness of tube walls  $\lambda$ , the coefficient  $\eta = 1 + \mu \operatorname{ctg} \psi$ , characterizing the tool shape and friction conditions. An analysis of the experimental and theoretical curves shows a fully satisfactory coincidence: the mean deviation does not exceed some percents. Fig. 6 shows the deformation of thin-walled tubes: a) - drawing of tubes, b) - reduction of tubes, c) and d) expansion of tubes. As a concrete example the authors present a derivation of the formula for the calculation of the wall thickness for the drawing of tubes without mandrel. There are 8 figures and 9 Soviet-bloc references.

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Axially symmetric problem of the theory of...

ASSOCIATION: Leningradskiy voyenno-mekhanicheskii institut (Leningrad  
Military-Mechanical Institute)

SUBMITTED: February 23, 1960

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SMIRNOV-ALYAYEV, G.A.; GUN, G. Ya.

Theory of longitudinal rolling. Izv.vys. ucheb. zav.; chern. met.  
no.3:108-118 '61. (MIRA 14:3)

1. Leningradskiy voyenno-mekhanicheskiy institut.  
(Rolling(Metalwork))

S/148/62/000/006/002/005  
E081/E435

AUTHORS: Polukhin, P.I., Gun, G.Ya., Masterov, V.A.,  
Knyshev, Yu.V.

TITLE: Calculation of the stresses and strains during the  
pressing of layered bodies

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya  
metallurgiya, no.6, 1962, 71-75

TEXT: The problem considered is the pressing out between dies of  
a material consisting of n layers of different substances (Fig.1)  
taking into account hardening, friction between the layers,  
and shear forces in the external zone. The work corresponding to  
the two latter effects is evaluated and, using the method of  
undetermined multipliers, formulae are derived which enable the  
specific pressure and the state of strain in the material to be  
calculated. A nomographic method of accomplishing the  
calculations is outlined. There are 2 figures.

ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)

SUBMITTED: January 10, 1962

Card 1/2

POLUKHIN, P.I.; MASTEROV, V.A.; GUN, G.Ya.

Theoretical investigation of the longitudinal rolling process  
with widening of the smooth barrel. Izv. vya. ucheb. zav.;  
chern., ~~1962. 5:99-107~~ 1962. (MIRA 15:6)

1. Moskovskiy institut stali.  
(Rolling (Metalwork))

POLUKHIN, F.I.; MASTEROV, V.A.; GUN, G.Ya.

Experimental verification of basic design equations of the process of longitudinal rolling with increase in width. Izv. vys. ucheb. zav.; tsvet. met. 5 no.4:157-168 '62. (MIRA 16:5)

1. Moskovskiy institut stali, kafedra prokatki i Leningradskiy mekhanicheskoy institut, kafedra obrabotki metallov davleniya.  
(Rolling (Metalwork))

POLUKHIN, P. I.; MASGEROV, V. A.; GUIN, G. Ya.

Effect of external parts on an increase in width during longitudinal  
rolling. *Izv. vys. ucheb. zav.; tsvet. met.* 5 no.5:141-144 '62.  
(MIRA 15:10)

1. Moskovskiy institut stali, kafedra prokatki.  
(Rolling (Metalwork)) (Deformations (Mechanics))

POLUKHIN, P.I.; GUN, G.Ya.; MASTEROV, V.A.; KNYSEV, Yu.V.

Calculating forces and deformations in the reduction of laminated  
solids. Izv.vys.ucheb.zav.; chern.met. 5 no.6:71-75 '62.  
(MIRA 15:7)

1. Moskovskiy institut stali.  
(Laminated metals) (Forging)

POLUKHIN, P.I.; MASTEROV, V.A.; GUN, G.Ya.

Effect of external parts on the widening and specific pressures during longitudinal rolling and upsetting. Izv. vys. ucheb. zav.; chern. met. 5 no.8:57-61 '62. (MIRA 15:9)

1. Moskovskiy institut stalisplyavcy i Leningradskiy mekhanicheskiy institut.

(Rolling (Metalwork)) (Deformations (Mechanics))

POLUKHIN, P.I.; GUN, G.Ya.; MASTEROV, V.A.

Calculated equation of the process of rolling with increase in width  
applying the law of plastic friction  $\sigma_{xy} \cdot \rho$ . Izv. vys. ucheb. zav.;  
chern. met. 5 no.9:116-124 '62. (MIRA 15:10)

1. Moskovskiy institut stali i splavov i Leningradskiy mekhanicheskiy  
institut.

(Rolling (Metalwork))



S/148/62/000/009/004/007  
E081/2535

AUTHORS: Smirnov-Alyayev G.A. and Gun G. Ya.  
TITLE: The theory of finite plastic deformation of a sheet material  
PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, no. 9, 1962, 150-154

TEXT: The general results are described of investigation of the deformed state by means of variational methods. Applying the current assumptions of the theory of shells, without assuming the magnitude of the strain to be small, formulae are derived which determine the main components and the main directions of strain. The strains  $\epsilon_1$ ,  $\epsilon_2$ ,  $\epsilon_3$  in the sheet are defined by considering an elementary sphere of radius  $\rho$  in the material; under the stress system applied for time  $t$ , the sphere becomes an ellipsoid with semi-axes  $b_1$ ,  $b_2$ ,  $b_3$ , and the strains are given by

$$\epsilon_1 = \ln \frac{b_1}{\rho}; \quad \epsilon_2 = \ln \frac{b_2}{\rho}; \quad \epsilon_3 = \ln \frac{b_3}{\rho} \quad (1)$$

It is assumed that the Kirchhoff-Love hypothesis applies, and on Card 1/3

The theory of finite plastic ...

S/148/62/000/009/004/007  
E081/E535

this basis the distortions and the strains in the sheet are expressed in differential form. The specific strain energy  $A$  is given by

$$A = \int_0^{\epsilon_i} \sigma_i d\epsilon_i \quad (12)$$

where  $\sigma_i$  and  $\epsilon_i$  are stresses and strains defined in terms of the principal stresses and strains. Assuming a power law relation between stress and strain

$$\sigma_i = B \epsilon_i^m ; \quad A = \frac{B \epsilon_i^{m+1}}{m+1} \quad (13)$$

the Lagrange variational equations are applied to obtain formulae which yield a theoretical solution for the deformed state of the sheet. A procedure is outlined for solving practical problems which in the general case can be formulated as follows: The initial shape of the die, the mechanical properties of the material and the boundary conditions (method of clamping the edges, conditions of friction on the surface, displacement of the

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The theory of finite plastic ...

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E081/E535

tool etc.) are known and from these the final deformed shape as well as the required forces and the energy consumption have to be determined. Alternatively, the problem may be the inverse one, namely, of determining the shape and dimensions of the die from the final shape of the component. Subsequent papers will be published in which this method of solution will be applied to a number of concrete problems of the theory of finite plastic deformations of sheet material. There is 1 figure.

ASSOCIATION: Leningradskiy voyenno-mekhanicheskiy institut  
(Leningrad Military-Mechanical Institute)

SUBMITTED: May 26, 1961

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Card 3/3

SMIRNOV-ALYAYEV, G.A.; GUN, G.Ya.

Principles of the theory of continuous forming on shape bending  
machines. Izv.vys.ucheb.zav.; chern.met. 5 no.11:99-105 '62.  
(MIRA 15:12)

1. Leningradskiy mekhanicheskii institut.  
(Sheet-metal work)

TARNOVSKIY, I.Ya.; POZDEYEV, A.A.; KOL'OGOROV, V.L.; VAYSBURD,  
R.A.; GUR, G.Ya.; KOTEL'NIKOV, V.F.; TARNOVSKIY, V.I.;  
SKOROKHOV, A.M.

[Variational principles of mechanics in the theory of metal-  
working by pressure] Variatsionnye printsipy mekhaniki v teo-  
rii obrabotki metallov davleniem. Moskva, Metallurgizdat,  
1963. 52 p. (MIRA 17:5)

GUN, G.Ya.; POLUKHIN, P.I.

Plastic flow in a polygonal strip of material undergoing hardening.  
Report no. 1. Izv. vys. ucheb. zav.; chern. met. 6 no.6:81-87  
'63. (MIRA 16:8)

1. Leningradskiy mekhanicheskiy institut i Moskovskiy institut  
stali i splavov.

(Deformations (Mechanics))

GUN, G.Ya.; POLUKHIN, P.I.

Conformal transformation and variational methods in the pressure  
metalworking theory. Izv. vys. ucheb. zav.; Chern. met. 6 no.5:  
97-105 '63. (MIRA 16:7)

1. Leningradskiy mekhanicheskiy institut i Moskovskiy institut  
stali i splavov.

(Rolling (Metalwork)) (Drawing (Metalwork))

GUN, G.Ya.; POLUKHIN, P.I.

Plastic flow of a hardener material in a multiangular strip. Izv.  
vys. ucheb. zav.; chern. met. 6 no.7:91-95 '63. (MIRA 16:9)

1. Leningradskiy mekhanicheskiy institut i Moskovskiy institut  
štali i splavov.  
(Metals--Hardening) (Deformations (Mechanics))



GUN, G.Ya.; POLUKHIN, P.I. :

Some problems of plastic flow in a polygonal strip. Izv. vys.  
ucheb. zav.; chern. met. 6 no.8:85-92 '63. (MIRA 16:11)

1. Leningradskiy mekhanicheskoy institut i Moskovskiy institut  
stali i splavov.

GUN, G.Ya. (Leningrad):

"On the application of conformal mapping in the theory of plastic flow."

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 Jan - 5 Feb 64.

GUN, G.Ya.; POLUKHIN, P.I.

Conformal representation in the theory of smoothly changing  
plastic flow. Report No.2. Izv. vys. ucheb. zav.; chern.  
met. no.9:68-73 '64. (MIRA 17:6)

1. Leningradskiy mekhanicheskoy institut i Moskovskiy institut  
stali i splavov.

SHVEYKIN, V. V.; GUN, G. Ya.; IVSHIN, P. N.

Stability of the cross sectional shape of a pipe during reduction.  
Izv.vys.ucheb.zav.; chern.met. 7 no. 4:88-92 '64. (MIRA 17:5)

1. Ural'skiy politekhnicheskiy institut.

GUN, G. Ya.; POLUKHIN, P. I.

Theory of smoothly changing plastic flows. Izv. vys. ucheb. zav.;  
chern.met.7 no. 5:69-74 '64. (MIRA 17:5)

1. Moskovskiy institut stali i splavov.

GUN, G. Ya.; POLUKHIN, P.I.

Conformal transformation in the theory of a smoothly changing plastic flow. Report no.1:Izv. vys. ucheb. zav.; Chern. met. 7 no.7:90-95 #64 (MIRA 17:8)

1. Leningradskiy mekhanicheskiy institut i Moskovskiy institut stali i splavov.

L 36295-65 EWT(d)/EWT(m)/EWA(d)/EWT(f)/EWP(k)/EWP(h)/MP(b)/EWP(1)/  
EWA(c) Pf-4 JD/IN

ACCESSION NR: AP4047336

S/0148/64/000/010/0070/0074

AUTHOR: Gun, G. Ya.; Polukhin, P. I.; Prudkovskiy, B. A.; Polukhin, V. P.

TITLE: Certain problems pertaining to the theory of extrusion in unsymmetrical and multihole dies

SOURCE: IVUZ. Chernaya metallurgiya, vol. 7, no. 10, 1964, 70-74

TOPIC TAGS: velocity field, plastic flow, interface, deformation, multihole die, unsymmetrical die, extrusion, extrusion die

ABSTRACT: In plotting a flat turbulent-free field of velocities determined by an analytical function, the complex potential  $\omega(z)$ , the physical region D of the plastic flow and region E of the complex potential are mapped conformally in the upper half-plane. Assuming that region D is a generalized polygon A with apexes  $A_k$  and with angles  $\alpha_k$   $\eta$  ( $0 \leq \alpha_k \leq 2\pi$ ) the auxiliary half plane  $\text{Im } \xi > 0$  is introduced and regions D and E plotted on it. The pressure efficiency is written as the sum of pressure efficiencies in the first and the second hole and the shear force on the flow interface is added. The flow interface in the first and second hole

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ACCESSION NR: AP4047336

may be derived from the minimum forming efficiency which, in turn, determines the relationship of outflow from the first and second holes. In polygonal regions, the flow in multi-hole dies is determined by using the method of discontinuous functions. Let plastic flow occur in an nonsymmetrical die in region D, having assigned parameters  $H$ ,  $h$ ,  $C_1$  and  $C_2$ . The flow in region D may be considered as a flow in two simpler regions I and II, attached along current line  $A-A'$  which is the flow interface. The flow interface contains section  $A_3A_4$  where discontinuous velocities occur along that interface. The region of intensive plastic deformations is bounded by equipotential surfaces that pass through angle points and by a surface determined by angle  $\psi$ . Let us limit the zones of intensive plastic deformations in regions I and II corresponding to surfaces  $A_1A_2A_3A_3$  and  $A_4A_5A_6A_7$ . The discontinuity in velocities will be considered only for section  $A_3A_4$  of the flow interface. The mean specific pressure is written

$$\frac{p}{2\tau_s} = \frac{\dot{A}}{2\tau_s \cos(\psi_1 + \psi_2)} = \frac{H_1}{H_1 + H_2} \left[ \left(1 + \frac{1}{\psi_1}\right) \cdot \ln \frac{H_1}{h_1} + 0.88\psi_1 \right] + \frac{H_2}{H_1 + H_2} \left( \ln \frac{H_2}{h_2} + 0.88\psi_2 \right). \quad (1)$$

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Functional (1) stands in linear relationship with  $\psi_2$ . Its minimum value corresponds to the value of  $\psi_2^0$  at which equipotential surface  $A_6A_7$  becomes equipotential surface  $B_3B_2$  forming a common area of deformation. Orig. art. has: 3 figures and 18 equations.

ASSOCIATION: Moskovskiy institut stali i splavov (Moscow Steel and Alloy Institute)

SUBMITTED: 21Mar64

ENCL: 02

SUB CODE: MM

NR REF SOV: 004

OTHER: 000

Card 3/5

GUN, G.Ya.; POLUKHIN, P.I.

Using analytical functions in plane problems of plastic flow.  
Izv. vys. ucheb. zav.; chern. met. 7 no.11:81-88 '64.

(MIRA 17:12)

1. Leningradskiy mekhanicheskij institut i Moskovskiy institut  
stali i splavov.

POLUKHIN, P.I.; FOLBERG, V.P., NIKOLAEV, V.I., 1964, 18:11

Polarization optical method of investigating contact stresses  
in the rolling process. Izv. vuz. u.kub. zavod. Chern. met. 7  
no.12:52-58 1964 (MIRA 18:11)

1. Moskovskiy institut stali i splavov.

BERKOVSKIY, V.S.; GUN, G.Ya.; KRAKHT, V.B.; KRAKHT, N.G.

Investigating plastic flow in passes in conditions of plain  
strain. Izv.vys.ucheb.zav.; Chern. mat. 8 no.4:123-127 '55.  
(MIRA 18:4)

1. Moskovskiy institut stali i splavov.

POLUKHIN, P.I.; GUN, G.Ya.; POLUKHIN, V.P.; PRUDKOVSKIY, B.A.; KOROLEV, V.M.

Using the method of electrohydrodynamic analogies in the theory  
of metalworking by pressure. Izv. vys. ucheb. zav.; chern. met.  
8 no.5:57-64 '65. (MIRA 18:5)

1. Moskovskiy institut stali i splavov.

L 2999-66 EWT(m)/ENF(t)/ENF(b) JD

ACCESSION NR: AP5013321

UR/0148/65/000/005/0057/0064 53  
669.1:621.731 52  
B

AUTHOR: Polukhin, P. I.; Gun, G. Ya.; Polukhin, V. P.; Prudkovskiy, B. A.;  
Korolev, V. M.

TITLE: Adaptation of the electrohydrodynamic analogue method to the theory of  
metal processing under pressure

SOURCE: IVUZ. Chernaya metallurgiya, no. 5, 1965, 57-64

TOPIC TAGS: plastic flow, mathematic model, metallurgic process, pressure casting

ABSTRACT: The application of the theory of complex variables to plastic flow during metal processing was studied by the mathematical modeling of potential fields. In particular, the method of electrohydrodynamic analogues was found to be directly applicable to metal processing theory. Three specific cases are considered: the general theory of plane-parallel plastic flow, the drawing of profiles of intricate form, and the pressing of profiles of intricate form. Plastic flow equations are given for plane-parallel flow in terms of complex variables, utilizing a mathematically postulated Q-plane, which allowed approximate calculations to be made for the energy and strength parameters of the process. The flow pattern is presented,

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ACCESSION NR: AP5013321

along with a parametric plot of the Q-plane. For the case of the drawing of intricate shapes, a similar approach was given. A deformation function  $\phi = \phi(x, y)$  is used to calibrate a draw plate; this function is determined by solving a Laplacian in  $x$  and  $y$  for specified boundary conditions. Results are given for  $1-\phi$ , calculated at the center of the draw plate, as a function of degree of deformation. For the final case, pressing of profiles of intricate shape, a further innovation is made in the general mathematical treatment, by using

$$\psi = u_x + i v_y$$

to describe the velocity field. A complex potential is calculated, and the flow behavior of a thin walled pressing is described. Flow lines are sketched and shown to be equivalent to those obtained during metal processing. Orig. art. has: 6 figures.

ASSOCIATION: Moskovskiy institut stali i splavov (Moscow Institute of Steel and Alloys)

SUBMITTED: 22Jan65

ENCL: 00

SUB CODE: MM, ME

NO REF SOV: 009

OTHER: 000

Card 2/2 *Ad*

GUN, G.Ya.; POLUKHIN, P.I.; PRUDKOVSKIY, B.A.; POLUEHIN, V.P.; YERMANOK, M.Z.

Calculating strain hardening and the temperature field  
during extrusion. Izv. vys. ucheb. zav.; tsvet. met. 8  
no.4:134-139 '65. (MIRA 18:9)

1. Kafedra tekhnologii i avtomatizatsii prokatnogo proizvodstva  
Moskovskogo instituta stali i splavov.



POTAPOV, A.S., starshiy nauchnyy sotr.; DEDOV, A.G., mladshiy nauchnyy sotr.; USTINOVA, N.A., mladshiy nauchnyy sotr.; GUN, K.K., red.

[Chemical and rubber industry of capitalist countries] Khimicheskaya i rezinovaya promyshlennost' kapitalisticheskikh stran; statisticheskii sbornik. Moskva, Nauchno-issl. in-t tekhniko-ekon. issledovaniy, 1960. 205 p. (MIRA 14:10)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po khimii.  
(Chemical industries--Statistics) (Rubber industry--Statistics)

GUN, L.

Establishing grain receiving stations in remote grain producing regions. Muk.-elev. prom. 27 no.2:10-12 F '61. (MIRA 14:4)

1. Glavnyy inzhener Novosibirskogo upravleniya khleboproduktov.  
(Novosibirsk Province--Grain elevators)

GUN, L., inzh.

Automatic control of dryer furnaces converted to liquid fuel.  
Mak.-elev. prom. 28 no.12:14-15 D '62. (MIRA 16:1)

1. Novosibirskoye upravleniye khloboproductov.  
(Grain--Drying)

GUN, L.; KRSHEMINSKIY, V.; BLOKHIN, P.; DUNDUK, I., kand.tekhn.nauk; TULER, A.

Shaft recirculation grain dryer at the Kochnewo Grain Receiving Station. Muk.-elev. prom. 29 no.3:6-8 Mr '63. (MIRA 16:9)

1. Glavnyy inzh. Novosibirskogo upravleniya khleboproduktov (for Gun). 2. Direktor Sibirskogo filiala Vsesoyuznogo nauchno-isledovatel'skogo instituta zerna i produktov yego pererabotki (for Krsheminskiy).

YAKOVENKO, D.K.; GUN, M.G.; POPOV, T.I.; PONKRATOV, N.P.

The ShPS-1 grinder for mosaic panels [Suggested by D.K. Iakovenko  
and others] Rats. i izobr. predl. v stroi. no.6:119-121 '58.  
(Grinding machines) (MIRA 11:10)

YAKOVENKO, D.K.; GUN, M.G.; POPOV, T.I.; PONKRATOV, N.P.

The ShPS-2 grinder for mosaic sills and steps. [Suggested by  
D.K. Iakovenko and others] Rats. i izobr. predl. v stroi.  
no.6:122-125 '58. (MIRA 11:10)  
(Grinding machines)

GUN, M.G., inzh.; SALENKOV, Yu.S., inzh.; TROUPYANSKIY, B.F., kand.  
tekh. nauk

Modernizing multiple molds at the Kharkov Housing Construction  
Combine. Bet. 1 zhel.-bet. 9 no.3:112-114 Mr '63.  
(MIRA 16:4)

1. Khar'kovskiy domostroitel'nyy kombinat (for Gun, Salenkov).
2. Khar'kovskiy inzhenerno-stroitel'nyy institut (for Troupyanskiy).  
(Kharkov—Concrete plants)

PA 9T57

GUN, R. B.

USSR/Petroleum - Cracking  
Petroleum - Fractionating

Jun 1947

"Reconstructing the Cracking Plant of the Vinkler-Kokh Type," R. B. Gun, 8 pp

"Neftyanoye Khozyaystvo" Vol 25, No 6

Drawings show the technological scheme of the new Vinkler-Koth type plant. Tables show percentages of various fractionation products. Subject type is said to be widely used in the USSR.

9T57



AUTHORS: Gun, R. B. and Bakutkin, A. B. 80V/65-56-5-11/14

TITLE: Indicating the Level in Oxidation Stills of a Bitumen Plant with the Aid of Radioactive Isotopes  
(Signalizatsiya urovnya v kubakh-okislitel'nykh bitumnoy ustanovki pri pomoshchi radioaktivnykh izotopov)

PERIODICAL: Khimiya i Tekhnologiya Topliva i Masel, 1966, No. 3, pp. 60 - 63. (USSR).

ABSTRACT: The change- over from the manual method of measuring the level in oxidation stills to an automatic distancing indicator was investigated. Two methods were investigated on the oxidation still OIG-AH: (1) with the aid of the radioactive isotope  $Co^{60}$  (with the new contactless method), (2) with the aid of a thermocouple and a potentiometer to register the temperatures. A modified method using one radiation source, two measuring devices, and one thermocouple is discussed. It was found necessary to define the zones of sensitivity with a gamma relay when working with the radioactive isotope  $Co^{60}$ . Details are given of the fixing of the gamma relay on one of the oxidation stills of the bitumen plant of the Moscow NPZ. When the radioactive isotope  $Co^{60}$  was used it was found that the zone of sensitivity varied between 35 - 500cm.

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SOV/65-58-5-11/14

Indicating the Level in Oxidation Stills of a Bitumen Plant with the Aid of Radioactive Isotopes.

From Table 1 it can be seen that an increase in the difference of the signals between the source and the measuring device increases the error in defining the level. During experiments with a thermocouple, the latter was used for measuring the temperature of the product during the oxidation of gondron; results of two experiments are given in Fig.2. The advantages of the second method lies in the fact that the temperature is registered continuously, and by calculating the time elapsed after stabilisation of the temperature it is possible to define the actual level of the product in the still; this is not possible when using the first method. Three modifications of the first method are compared. In the first modification, the gamma relay is divided into two blocks (Fig.3); in the second, the measuring device is mounted together with the relay (Fig.4), and in the third, the measuring device STS is assembled in a small box, and fixed on the still. The cost of both methods is calculated. The gamma relay PR-500, RK-50 and the thermocouples TKA and EPP-9 were used during the investigations. Both methods satisfied industrial

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SOV/65-58-5-11/14

Indicating the Level in Oxidation Stills of a Bitumen Plant with  
the Aid of Radioactive Isotopes.

requirements, and are of practically equal importance.  
There are 5 Figures, 1 Table, 1 Soviet reference.

ASSOCIATION:SKB ANN

Card 3/3

SOV/65-59-7-11/12

AUTHOR: Gun, R.B.

TITLE: Group Chemical Composition of Oxidized Bitumens  
(Grupnovoy khimicheskiy sostav okislennykh bitumov)

PERIODICAL: Khimiya i tekhnologiya topliv i masel, 1959, Nr 7,  
pp 51-59 (USSR)

ABSTRACT: The author states that no investigations have dealt with oxidized bitumens from sulphur-containing oils under the conditions of their industrial production. The object of the work described was to fill this gap. The materials were oxidized bitumens of various grades made at the Ufimskiy neftezhavod (Ufa Oil Works). The bitumens were made from 30% petroleum asphalt from Tuymazy oil; they were oxidized on the bitumen plant at 250 °C. The physico-chemical properties and group composition of the asphalt and of the oxidized bitumens were determined by the Markusson (Groz NII) (Ref 5) and the Bestuzhev-Bargman (Ref 1) methods. The results are compared in Fig 2. Fig 1 shows the dependence of these properties on temperature while Figs 3 and 4 show the corresponding changes in composition. The group chemical composition of the oxidized bitumens is shown in Fig 5. The nature

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SOV/65-59-7-11/12

Group Chemical Composition of Oxidized Bitumens

and properties of the various materials are shown in tables. It was found that in high-melting bitumens the stretchability and depth of needle penetration fall sharply with increasing asphaltene content. The Bestuzhev-Bargman method gives considerably lower results for asphaltene determinations than that of Markusson. With increasing oxidation the molecular weight and degree of unsaturation with hydrogen of asphaltenes rise, the C : H ratio remains almost constant and the relative oxygen content falls. As oxidation of asphalt proceeds the quantity of normal paraffin hydrocarbons remains almost unchanged; the contents of naphthene and aromatic hydrocarbons in maltenes falls and the asphaltene content of the bitumen rises. The work confirmed the asphaltene-formation mechanism as proceeding from naphthenes and aromatics through tars. There are 5 figures, 7 tables and 15 references, 9 of which are Soviet and 6 English.

Card 2/2

ASSOCIATION: SKB-ANN

GUN, R. B., Cand Tech Sci (diss) -- "Investigation of the production of oxidized petroleum bitumen". Moscow, 1960. 9 pp (Min Higher and Inter Spec Educ RSFSR, Moscow Order of Labor Red Banner Inst of the Petroleum-Chem and Gas Industry im I. M. Gubkin, Chair of the Tech of Petroleum and Gas), 170 copies (KL, No 15, 1960, 134)

PHASE I BOOK EXPLOITATION

SOV/5279

Gun, Rudol'f Borisovich, and Moisey Borisovich Rybak

Kompleksnaya avtomatizatsiya ustanovok vtorichnoy peregonki (Complex Automation of Redistillation Plants) Moscow, Gostoptekhzdat, 1960. 74 p. 3,000 copies printed.

Scientific Ed.: N. A. Korobtsova; Tech. Ed.: E. A. Mukhina.

PURPOSE: This booklet is intended for technical personnel in oil refineries, chemical, and petrochemical plants. It will also be of interest to workers in design offices and planning organizations, and engineers and technicians concerned with the use of control and measuring instruments.

COVERAGE: The booklet describes control and regulation systems for Soviet petroleum redistillation plants, and analyzes the operation of these systems. Results from experimental and research work on the interdependence of process conditions and the physicochemical properties of stock as well as finished and

Card ~~1~~/4

Complex Automation (Cont.)

SOV/5279

semifinished products are presented. A new automation and regulation scheme, developed by the **SKB-ANN** (Special Design Office of ANN), is proposed and described along with new control and regulation equipment. An estimate of the industrial and economic effect resulting from the overall automation of a redistillation plant is made. No personalities are mentioned. There are 6 references: 5 Soviet, and 1 English.

TABLE OF CONTENTS:

Introduction	3
1. Flow Sheet of a Control and Automatic Regulation System for the Operation of Existing Type 22-1/1 Redistillation Units	5
2. Laboratory Control of the Technological Process	10

Card 2/4



GUN, R.B., konstruktor, CHAYKO, A.L., konstruktor

Automatic control of an electric desalter. Neftianik 5 no.1:14-17  
Ja '60. (MIRA 13:11)

1. Spetsial'noye konstruktorskoye byuro po avtomatike v nefte-  
pererabotke i proizvodstve iskusstvennogo zhidkogo topliva.  
(Petroleum refineries--Equipment and supplies)  
(Automatic control)

GUN, R.; CHAYKO, A.

Automatic control of pressure gradients. Neftianik 6 no.1:18 Ja  
'61. (MIRA 14:4)

(Oil refineries—Equipment and supplies)

SMIRNOV, N.P.; GUN, R.B.; RYBAK, M.B.

Controlling the temperature of a rectification column bottom.  
Neftianik 6 no.5:21-22 My '61. (MIRA 14:5)

1. Zamestitel' glavnogo inzhenera Novo-Ufinskogo neftepererabatyvayushchego zavoda (for Smirnov). 2. Spetsial'noye konstruktor-skoye byuro po avtomatike v neftepererabotke i neftekhimii (for Gun, Rybak).

(Plate towers)

SMIRNOV, N.P.; GUN, R.B.; RYBAK, M.B.

Regulation of the level of the product in the bottom of a tower.  
Neftianik 6 no.7:15-16 JI '61. (MIRA 14:7)

1. Zamestitel' glavnogo inzhenera Novo-Ufimskogo neftepererabatyvayushchego zavoda (for Smirnov). 2. Sotrudniki spetsial'nogo konstruktorskogo byuro po avtomatike v neftepererabotke i neftekhimii (for Gun, Rybak).

(Distillation apparatus)

YAKUSHEV, F.N., starshiy inzh.; GUN, R.B.; CHAYKO, A.L.

Automatic control in the desalting of oil. Neftianik 6  
no.8:14-16 Ag '61.

(MIRA 14:10)

1. Chernikovskiy neftepererabatyayushchiy zavod (for Yakushev).
2. Sotrudniki Spetsial'nogo konstruktorskogo byuro po avtomatike  
v neftepererabotke i neftekhimii (for Gun, Chayko).  
(Petroleum--Refining) (Automatic control)

GUN, R.B.; RYBAK, M.B.

Applying cascade automatic control systems to the redistillation  
unit at the Novoufimka Petroleum Refinery. Khim.i tekhn.topl.  
i masel 6 no.9:48-50 S '61. (MIRA 14:10)

1. Spetsial'noye konstruktorskoye byuro po avtomatike v neftepererabotke  
i neftekhimii.

(Petroleum refineries---Equipment and supplies)  
(Automatic control)

GUN, R.B.; KYBAK, M.B.

Automatic control of specific gravity in a flow. Khim.i tekhn.  
topl.i masel 7 no.5:60-65 My '62. (MIRA 15:11)

1. Spetsial'noye konstruktorskoye byuro avtomatizatsii neftepererabotki  
i neftekhimii.  
(Petroleum products) (Specific gravity)

GUN, R.B.

All-Union conference on the automatic control of petroleum re-  
fining processes. Khim. i tekhn. topl. i masel 7 no.10:70-72  
0'62 (MIRA 07'87)



GUN, R.B., kand.tekhn.nauk

Automatic control of production processes in petroleum refineries.  
Mekh.i avtom.proizv. 16 no.7:1-6 JI '62. (MIRA 15:8)  
(Automatic control) (Petroleum Refining)

GUN, R.B.

Automation of petroleum refineries. Biul.tekh.-ekon.inform.Gos.nauch.-  
issl. inst.nauch. i tekhn.inform. no.7:9-16 '62. (MIRA 15:7)  
(Petroleum refineries) (Automation)

GUN, R.B.; BIRYUKOV, V.V.

New cascade system for controlling the performance of the vacuum furnace. Neftianik 8 no.2:26-27 F '63. (MIRA 16:10)

1. Sotrudniki Spetsial'nogo konstruktorskogo byuro avtomatizatsii neftepererabotki i neftekhimii.

REF. R. 6.

Technological and economic effect of the use of a plant chromatograph in a system of automatic control and regulation. Nefteser. i neftekhim. no. 1-42-44 '64. (MIRA 17:6)

1. Spetsial'noye konstruktorskoye byuro po avtomatike v neftepererabotke i neftekhimii.

KOZLOV, I.A.; GUN, R.P.

Remote control of pumps of petroleum enterprise reservoirs.  
Mash. i neft. obor. no.6:27-31 '64. (MIRA 18:2)

1. Spetsial'noye konstruktorskoye byuro po avtomatike v  
neftepererabotke i neftekhimii.

VASSERMAN, L.K., inzh.; GUN, R.B., kand. tekhn. nauk

Efficiency of the automation of petroleum refineries. Mekh.  
i avtom. proizvod. 18 no.7:34-36 J1 '64. (MIRA 17:9)

GUN, R.B.

Using automatic control computers in petroleum refining and petro-chemistry. Nefteper. i neftekhim. no.6:51-52 '65. (MIRA 18:7)

1. Spetsial'noye konstruktorskoye byuro po avtomatike v neftepererabotke i neftekhimii.

BELOVERSKIY, G.N.; GUN, R.B.; BIRYUKOV, V.V.; KOGAN, Yu.S.

New flow diagrams for the automatic control of simple rectification columns. Nefteper. i neftekhim. no.5:43-45 '65. (MIRA 18:7)

1. Spetsial'noye konstruktorskoye byuro po avtomatike v neftepererabotke i neftekhimii.



BELOZERSKIY, S.S.; GUN, R.B.

Requirements for petroleum refining and petrochemical  
equipment and apparatus in connection with overall  
automation. Mash. i nefteobor. no.11:31-32 '64.

(MIRA 19:1)

1. Spetsial'noye konstruktorskoye byuro po avtomatike v nefte-  
pererabotke i neftekhimii.

GUN, R.B.; BIRYUKOV, V.V.; BOLDOVA, I.P.; YATSKEVICH, G.L.

Automatic control of an assembly of a regeneration unit  
for the adsorption purification of liquid paraffins.  
Mash. i nef. obor. no.11:33-37 '64.

(MIRA 19#1)

1. Spetsial'noye konstruktorskoye byuro po avtomatike v nefte-  
pererabotke i neftekhimii.

PEKAR', P.P., starshiy nauchnyy sotrudnik; SHEVCHENKO, L.A. (Bobrinets)  
GUN, S.I. (Genichesk); RYBINA, N.A. (Novo-Ukrainka);  
PASECHNIKOVA, I.G. (Bereznigovatoye); MATVEYEVA, Ye.M.  
(ARBUZINKA); PODOL'SKIY, L.G. (Starokazatskoye); GRISHAYEVA,  
A.P. (Peschanoye); PYATOVA, A.S. (Varvarovka)

Efficacy of artificial pneumothorax in pulmonary tuberculosis  
patients under rural conditions. Probl. tub. no.8:71-75'62.  
(MIRA 16:9)

1. Iz Odesskogo nauchno-issledovatel'skogo instituta tuberku-  
leza (dir. - starshiy nauchnyy sotrudnik M.A.Yerusnikin).

GUNA, Jozse (Trbovlje)

Results of the introduction of the statistical methods of quality control  
in Machine Factory Trbovlje. Nova proizvodnja no.4-5-6:275-277 D '61.

VISAN, A.; SATMARI, C.; PETRUSCA, J.; STANCU, AL.; BRONITKI, A.; ROTSCCHILD, L.;  
PIRONCOF, M.; GUNA, S.

Effectiveness of anti-influenza vaccinations. Stud. cercet. infra-  
microbiol., Bucur. 8 no.1:57-69 1957.

(INFLUENZA, prevention & control

vacc., effectiveness of German polyvalent vaccine & Rumanian  
monovalent vaccine)

(VACCINES AND VACCINATION

influenza vacc., effectiveness of German polyvalent & Rumanian  
monovalent vaccines)

GUNAR, I. I.

Chemical agents for combating weeds      Moskva, Gos. izd-vo sel'khoz. lit-ry,  
1952.    142 p.

SB611.G8

GUNAR, I.

Plants, Effect of Insecticides on

Wonderful substances. Mol. kolkh. 19, No. 5, 1952.

Monthly List of Russian Accessions, Library of Congress, August 1952, Unclassified.

11-D

CA

G. M. Kozolapoff

G. M. Kozolapoff  
Carbonic anhydrase in plants. I. I. Gungor and R. E. Kratina (K. A. Timiryazev Agr. Acad., Moscow). *Doklady Akad. Nauk S.S.S.R.* 83, 161-4 (1952).—Tests with leaves of many common plants for a study of variation of the activity of the enzyme under various conditions revealed the following relations. In most cases the activity is higher in upper, younger leaves. Treatment of the plant with isopropylphenylcarbamate which retards photosynthesis and respiration, causes inactivation of the enzyme and the effect is greatest with younger plants. The effect is max. after 24 hrs. Chlorocortiside, 1-naphthylthiourea, thiourea, and urea give similar results. Carbonic anhydrase was detected even in the roots of corn and peas; this enzyme has the same characteristics. Enzyme from dicotyledonous plants is not affected by carbonates; this is true also of the plant behavior in this family as well, since the plant growth is not affected by the carbonates. G. M. Kozolapoff



1. GUMAR. I. I.; KRASNIK, VL. VL.; BRITUSHOVA, V. ...
2. USSR (600)
4. Plants, effect of Acids on; Sunflowers
7. Effect of 2, 4-dichlorophenoxyacetic acid on sunflower metabolism at different temperatures. Dokl. AN SSSR 84 No. 1, 1952  
Moskovskaya Sel'skokhozyaystvennaya Akademiya im. K. A. Temiryazeva
9. Monthly List of Russian Accessions. Library of Congress, September 1952, UNCLASSIFIED. Recd. 4 March 1952

GUNAR, I. I. and KRASTINA, Ye. Ye.

"Physiology and Biochemistry of the Phasid Development of Spring  
Wheat," Dokl. AN SSSR, 86, No.1, 1952

VASIL'YEV, Ivan Mitrofanovich; GUMAR, I.I., redaktor.

[Winter hardiness of plants] Simostoikost' rastenii. Moskva, Izd-vo  
Akademii nauk SSSR, 1953. 190 p. (MLRA 7:1)  
(Plants--Frost resistance)

1. ANNAR, I. I., KRIVON, Y. Ye.
2. USSR (600)
4. Vernalization
7. Length of vernalization in winter wheat in relation to the phase of development. Agrobiologiya, No. 1, 1953.

9. Monthly List of Russian Accessions, Library of Congress, May 1953. Unclassified.

GUNAR, I. I.

(General meeting of members of the Moscow Department of the All-Union Botanical Society.)  
A paper was read by the director of the chair of plant physiology of the Agricultural Academy imeni K. A. Timiryazev I. I. GUNAR, entitled "The Problem of Irritability of Plants," which evoked an animated discussion..

SO: Vestnik Akademii Nauk SSSR, No.4, April 1953, pp. 96-97      See SRI

GUNAR, I.I.; SILEVA, M.N.

Sugar changes in winter wheat during the process of hardening.  
Fiziol.rast. 1 no.2:141-145 N-D '54. (MIRA 8:10)

1. Kafedra fiziologii rasteniy Moskovskoy sel'skokhozyaystvennoy  
akademii imeni K.A.Timiryazeva  
(Wheat) (Plants--Metabolism)

GUNAR, I.I.

BASLAVSKAYA, S.S.; GUNAR, I.I.; TRUBETSKOVA, O.M.

"Plant physiology." B.A. Rubin. Reviewed by S.S. Baslavskaya, I.I. Gunar.  
O.M. Trubetskova. Fiziol. rast. 2 no. 3: 307-310 My-Je '55. (MLRA 8:11)  
(Botany--Physiology) (Rubin, B.A.)

GUNAR, I.I.

Chemical weeding. IUn.nat.no.1:36-37 Ap '56. (MIRA 9:9)

1.Zaveduyushchiy kafedroy fiziologii rasteniy Akademii imeni  
K.A.Timiryazeva.  
(Herbicides)



CATEGORY : M  
CULTIVATED PLANTS. Grains. Leguminous Grains.  
Tropical Cereals.  
ABS. JOUR. : REF ZHUR - BIOLOGIYA, NO. 4, 1959, No. 15620  
AUTHOR : Gunar, I.I.; Krastina, Ye.Ye.  
INST. : Moscow Agric. Academy im. K.A. Timiryazev  
TITLE : Reaction of Corn to Temperature Conditions

ORIG. PUB. : V sb.: Kul'tura kukuruzy v SSSR, M., "Sov.  
nauka", 1957, 12-15

ABSTRACT : An experiment was conducted in the artificial  
climate laboratory of the Timiryazev  
Agricultural Academy in testing a series of  
methods of acting on the Minnesota 13 corn  
seeds for the purpose of raising the plant's  
resistance to cold. Lowering of corn germina-  
tion as compared to control plants was  
observed in all experiment variations at all  
temperatures. Cold hardening of the seeds  
had a positive effect on corn plant resistance

CARD: 1/2

CATEGORY : CULTIVATED PLANTS.  
ABS. JOUR. : REF ZHUR - BIOLOGIYA, NO. 4, 1959, No. 15620  
AUTHOR :  
INST. :  
TITLE :

ORIG. PUB. :

ABSTRACT : to temperature lowering in the two-leaf phase,  
but under the conditions of sowing hardened  
seeds in warm soil. Any action on the corn  
seed which stimulates the seed drast-  
ically reduces plant germination after  
temporary cooling of the soil. Heating of  
the seed had almost no effect on germination,  
growth and development of corn.  
-- A.F. Khlystova

CARD: 2/2

USSR/Cultivated Plants - Grains.

M.

Abs Jour : Ref Zhur - Biol., No 4, 1958, 15543

Author : I.I. Gunar, Ye.Ye. Krastina

Inst : ~~-----~~

Title : The Effect of the Pre-Sowing Processing of the Seeds on  
Corn Development.  
(Vliyaniye predposevnoy obrabotki semyan na razvitiye  
kukuruzy).

Orig Pub : Kukuruza, 1957, No 1, 21-25.

Abstract : In the artificial climate laboratories of the K.A.  
Timiryazev Agricultural Academy the pre-sowing proces-  
sing of corn seeds by lowered temperatures increased  
the cold resistance somewhat, although it afflicted  
the germination of the seeds, particularly when planted  
in cold ground. The pre-sowing seed processing through  
alternating temperatures (according to Voronova's me-  
thod) had a positive effect on plant growth in some

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3/

*GUNAR, I.I.*

USSR/Cultivated Plants - Grains

M-4

Abs Jour : Ref Zhur - Biol., No 1, 1958, No 1511

Author : I.I. Gunar, Ye.Ye. Krastina

Inst : Moscow Order of Lenin Agricultural Academy imeni K.A. Timiryazev

Title : The Distribution of Phosphorus in Corn

Orig Pub : Kukuruza, 1957, No 3, 44-46

Abstract : The experiment was conducted in the TSKhA [Moscow "Order of Lenin" Agricultural Academy imeni K.A. Timiryazev] artificial climate laboratory in 1952 by the marked atom technique. The formation of the organs of fruitbearing greatly influences the distribution of P in the plant. During the projection and florescence of the panicle, the inflow of P into the upper part and corn panicle occurs. After the blossoming of the panicle, the inflow of P is observed in the site of the formation of the cob. The hypothesis is expressed that the castration of the corn favorably influences its development, inasmuch as the feeding matter reaches the cob at an earlier stage.

Card : 1/1

Abs Jour : Ref Zhur Biol., No 12, 1958, 53293

Author : Gunar, I.I., Krastina, Ye.Ye., Petrov-Spiridonov, A.Ye..

Inst : Timiryazev Agricultural Academy

Title : Rhythmicity of the Absorption and Excretion Activities in Roots.

Orig Pub : Izv. Timiryazevsk. s.-kh. akad., 1957, No 4, 181-206

Abstract : A study was made of the daily and impulse rhythm in the root activity of the sunflower, kidney bean, tomato, squash, and other plants cultivated in Knop's nutritive solution. The transpiration rate in the plants was determined by the amount of released sap. The P and S in the sap was determined by the method of isotope analysis, and K, Ca, and nitrates by the polarographic method. A daily periodicity in the rate of transpiration was

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USSR/Plant Physiology - Mineral Nutrition.

I

Abs Jour : Ref Zhur Biol., No 12, 1958, 53293

detected in plants cultivated under alternating conditions of light and darkness for a twenty-four hour interval, and it was not observed with constant exposure to light. A rhythmicity was also noted in the absorption of the investigated ions by the root system; it was considerably higher in the daytime than at night. A study of the release of ions from the sap also revealed a daily rhythm: the sulfate and phosphate concentration was higher in the daytime, but the concentration of nitrates was lower than at night. Moreover, a rhythmicity for periods of several hours was observed in the absorption of ions. Alternation of absorption and excretion of a definite ion by the plant roots is regarded by the authors as a successive exchange of periods of stimulation and suppression in the activity of the roots with a constant irritant. This was confirmed by the presence of pulsation periods of 15 - 30 minutes observed in the determination

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USSR/Plant Physiology - Mineral Nutrition.

Abs Jour : Ref Zhur Biol., No 12, 1958, 53293

of the transpiration rate and the secretion of phosphates and sulfates with the sap, and also the opposite changes in absorption and excretion of K and Ca. --  
N.G. Zhirnova

Card 3/3

GONAR, I. I.